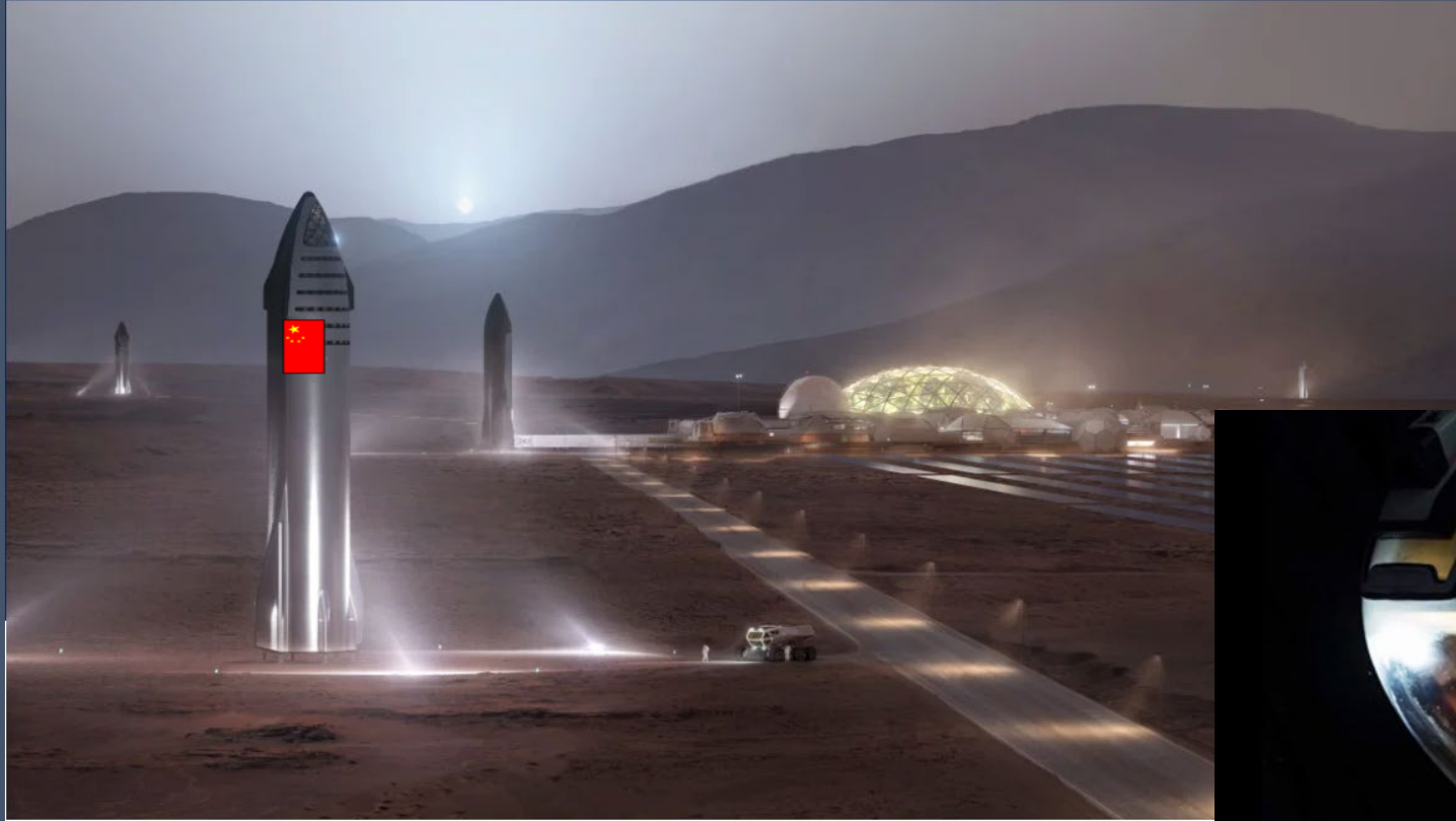


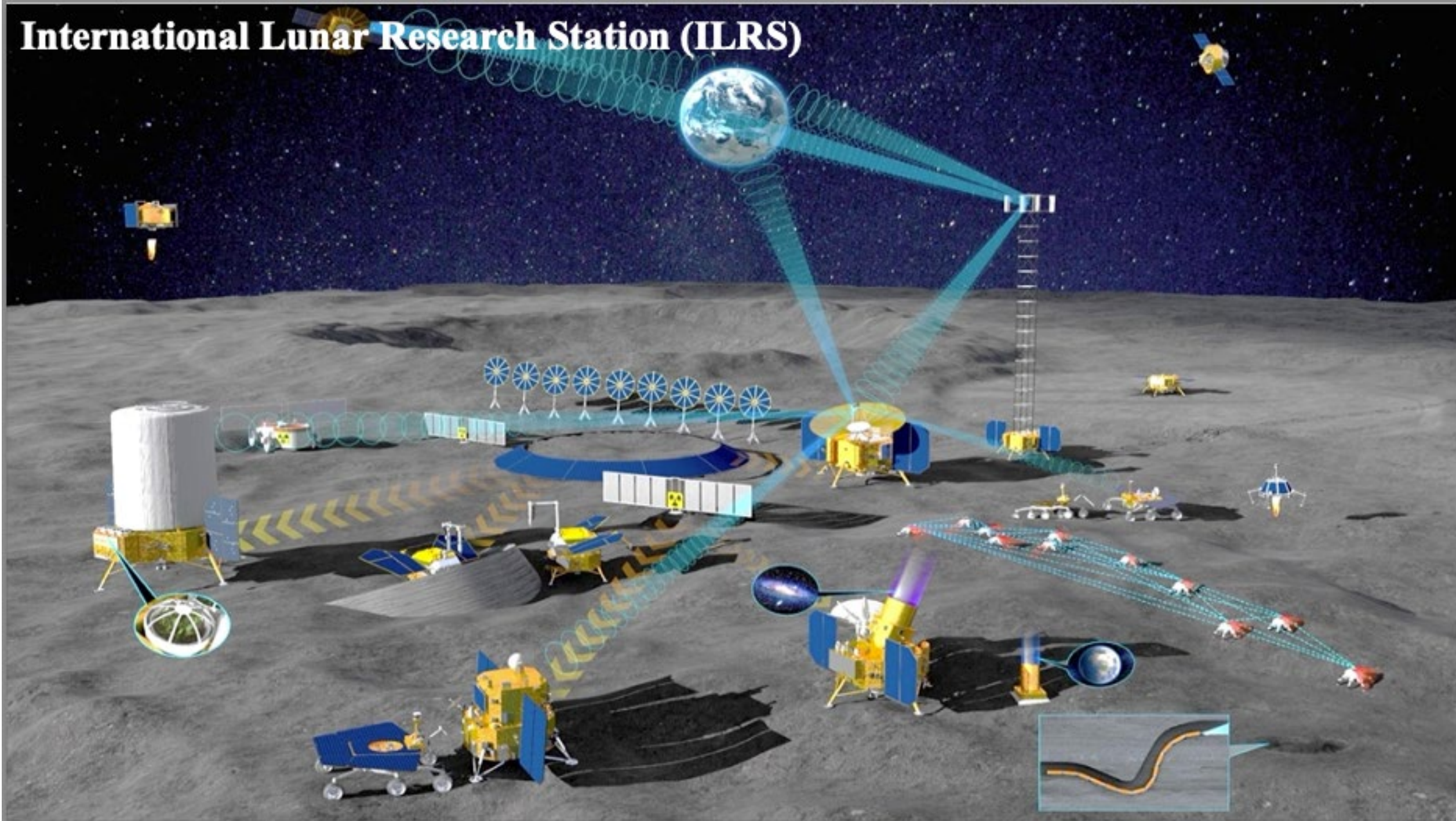
China's Human Programs for the Moon and Mars



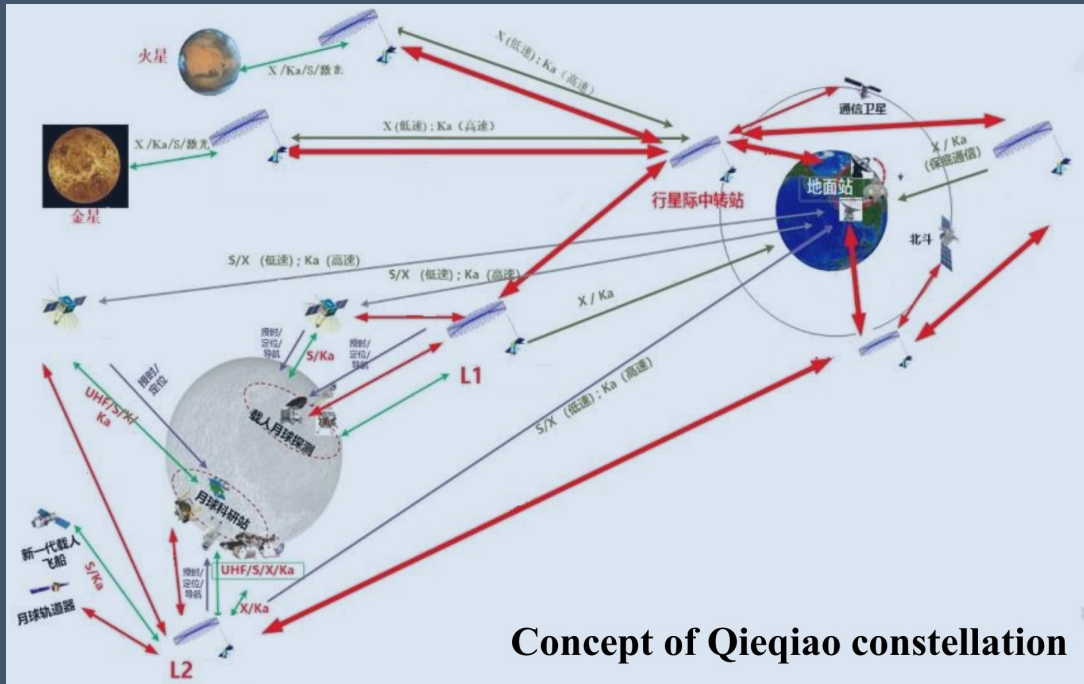
Scott Pace
Space Policy Institute
May 8, 2024



International Lunar Research Station (ILRS)



Space Communications and Navigation



Concept of Qiqiao constellation

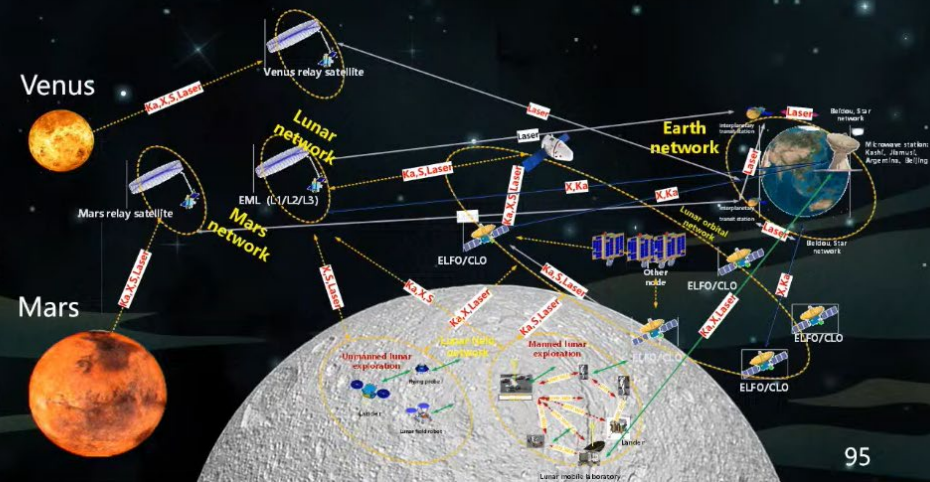
Chinese concepts are compatible with but not identical to Western ones, e.g., LunaNet

Approval of new ITU Agenda Item for lunar comm/nav spectrum allocations at WRC-23

Queqiao V3.0

Overall objective: Build the basic type of deep space communication and navigation system to achieve Mars and Venus communication and navigation coverage.

- **QQNet basic components**
Lunar network, Mars network, Venus network.
Each network can be connected to the Earth through interplanetary staging stations network interconnection (including BeiDou, Star network, etc).
- **Coverage capacity**
Achieve quadruple coverage for the whole Moon.
Achieve Mars and Venus communication and navigation coverage.
- **Composition of Earth-Moon-Mars core network**
Earth main nodes: interplanetary staging stations.
Lunar Main Node: EML Satellite.
Mars Main Node: Mars Relay Satellite.
Venus Main: Venus Relay Satellite.
Interconnection through high-speed lasers:



Chinese Views on Space Resources

Submission by the Delegation of China to the Working Group on Legal Aspects of Space Resource Activities of the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space

Upon the invitation of the Working Group on Legal Aspects of Space Resource Activities of the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space (hereinafter referred to as "the Working Group") addressed to States members for input on its mandate and purpose, and with a view to optimizing its work, the Chinese Delegation hereby makes the following submission:

I. Space Resources within the Mandate of the Working Group

1. The Chinese Delegation believes that the Working Group in scoping space resources should refer to the major projects of States members on exploring deep space planned for the near future and focus its discussion on physical resources such as water-ice in lunar regolith and lunar rocks. Nevertheless, it is well noted that solar energy, radio frequencies and orbits, and other resources which is not in physical nature, can be treated as space resources under other frameworks.
2. The Working Group will benefit from information shared on planned space resource activities to have well-targeted discussions. China plans to launch the Chang'e-6 lunar probe in the first half of 2024 to collect and bring back sample of lunar regolith from the backside of the Moon, and launch the Chang'e-7 lunar probe around 2026 to land at the South Pole of the Moon and hop over one or two shadowed areas to detect lunar resources, including water-ice. The Chang'e-8 lunar probe is planned to launch around 2028 for experimental verification of the utilization of lunar resources, and in cooperation with international partners China will establish the International Lunar Research Station over the next decade and verify in-situ utilization of lunar resources therein.

II. The Existing Legal Framework for Space Resource Activities

3. The Chinese Delegation, fully aware of space resource activities as a new form of human exploration and use of outer space, supports the Working Group to regulate space resource activities by virtue of faithfully interpreting and promoting implementation of current international space law and to contribute to its progressive development.
4. The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (hereinafter referred to as "the Outer Space Treaty"), as the cornerstone of the existing international space law, provides the fundamental principles for all outer space activities including space resource activities. The Chinese Delegation believes that

To this point, Chinese views are largely compatible with U.S. views and Artemis Accord signatories.



Chinese views on lunar sample data exchange are still evolving.



Rules for Management of International Cooperation in Lunar Samples and Scientific Data

Date : 2023-08-02

Chapter 1 General Provisions

Article 1 In order to effectively promote the joint research and application of lunar samples and promote the international sharing of scientific achievements, these Rules are established in accordance with the Procedures for Requesting Lunar Samples and Procedures for Requesting Scientific Data of Lunar and Deep Space Exploration Programs of China National Space Administration.

Article 2 The lunar samples refer to lunar samples retrieved through the sample return mission of China's lunar exploration program; and the scientific data refers to scientific and applied information obtained by China during its lunar exploration activities.

Article 3 The handling, transportation, storage and use environment of lunar samples involved in international cooperation shall meet the relevant provisions of the Procedures for Requesting Lunar Samples.

Article 4 The present Rules shall be applicable to the application, distribution, transportation, use and return of lunar samples during the requesting process, application and transmission of scientific data, management of information, and documentation of results.

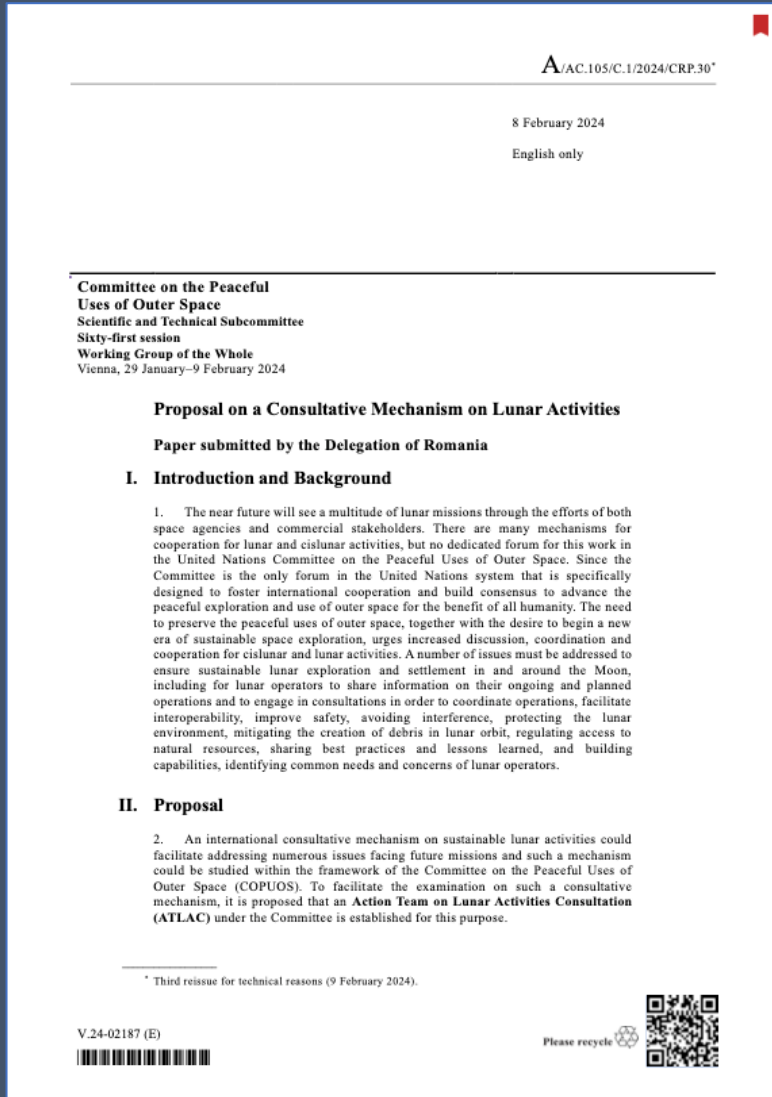
Chapter 2 Responsibilities

Article 5 China National Space Administration (CNSA) is the management authority of international cooperation in lunar samples and scientific data, with main responsibilities that include:

- (1) Formulating policies and regulations for international cooperation in lunar samples and scientific data;
- (2) Signing the cooperative agreements in respect to lunar samples and scientific data; and
- (3) Approving applications from international organizations for lunar samples and scientific data.

Article 6 CNSA's Lunar Exploration and Space Engineering Center (hereinafter referred to as LESEC) is entrusted to carry out joint research, information exchange and exhibition of lunar samples, distribution of scientific data, and other work.

A Consultative Mechanism on Lunar Activities



Romanian-proposed “action team” at the UN COPUOS STSC in 2024

- Create a charter for a multi-lateral mechanism under COPUOS
- Analogous to the International Committee on GNSS

U.S.-China Civil Space Dialogue

- First meeting in 2015 in Beijing
- Second meeting in 2016 in Washington, DC
- Third meeting in 2017 in Beijing
 - Follow-up meeting scheduled for 2020 but delayed to COVID-19
- No future meetings yet announced

Positives, Negatives and Uncertainties

- COPUOS
 - Consultative mechanism on lunar activities
- ITU
 - New agenda item for space comm/nav spectrum allocations
 - Treatment of mega-constellations?
- WG on Space Resources
 - Lunar samples
- Artemis Accords/International Lunar Research Station
 - ILRS principles still evolving
- Space Situational Awareness data
- Open-Ended Working Group in the Conference on Disarmament
- Safety Zones on the Moon
- Rescue and Return of Astronauts
 - Biomedical data

Driving issues are not civil space:

- South China Sea, India, Tibet
- Taiwan, Hong Kong, human rights
- Iran, Russia
- Counterspace weapons
- Cyberspace, IP theft
- Trade friction, supply chains, etc.

Backup